The U.S. Department of Defense Joint Non-Lethal Weapons Program

NDIA – Non-Lethal Acceptability Challenges: Standards, Human Effects, Testing and Training Forum

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NL Capabilities Human Effects Challenges

Objective: Provide quality effects data to support Warfighter confidence in NL technologies

- Limited Data/Experience
- Limited Resources
- No standards
- New Parameter Space
  - Requirements across broad realm of technologies
  - Assessment of both effects and effectiveness
  - Quantifying target behavior response
  - Accounting for variations in populations
  - Addressing sensitive populations vs intended targets

Human Effects and NLWs

Weapon Parameters

Human Effects

Stimuli to Human Body:

- Light/Sound
- RCA
- BOP
- Kinetic
- Electrical
- Laser / HPM

Human Response

"Physical" Probabilities:

- Intended effect
- Non-Permanent injury
- Permanent injury
- Kill

"Psychological" Probabilities:

- Individual Response
- Crowd Response

Both the "effect" and "effectiveness" must be clearly understood…

JNLWP Human Effects Process

- Risk characterizations
- Tools for stimuli-response
- Manage human effects data-base and research

HECOE

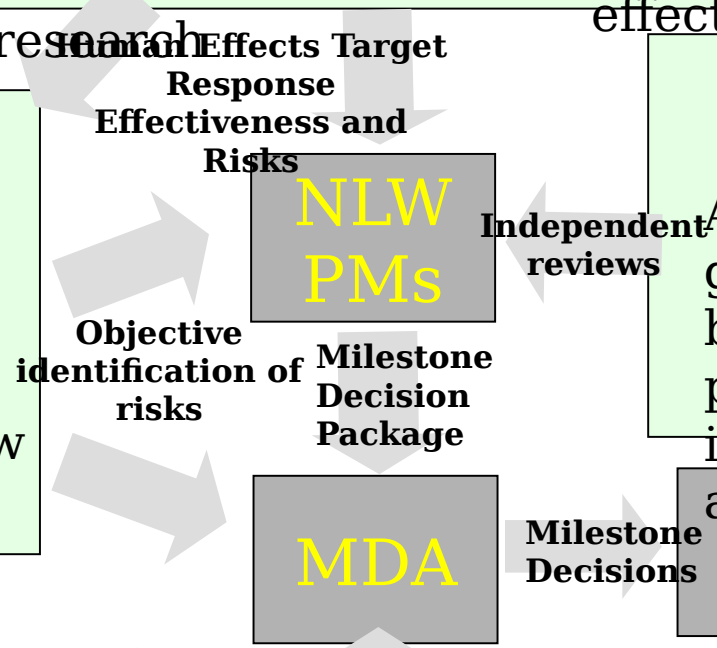
A team of DoD experts providing a "**one stop shop**" for NLW human effects information

HERB

A Joint Service board of medical officers providing independent review of human effects

HEAP

A non-governmental, blue-ribbon panel providing independent assessments



Human Effects Risk Characterization Framework

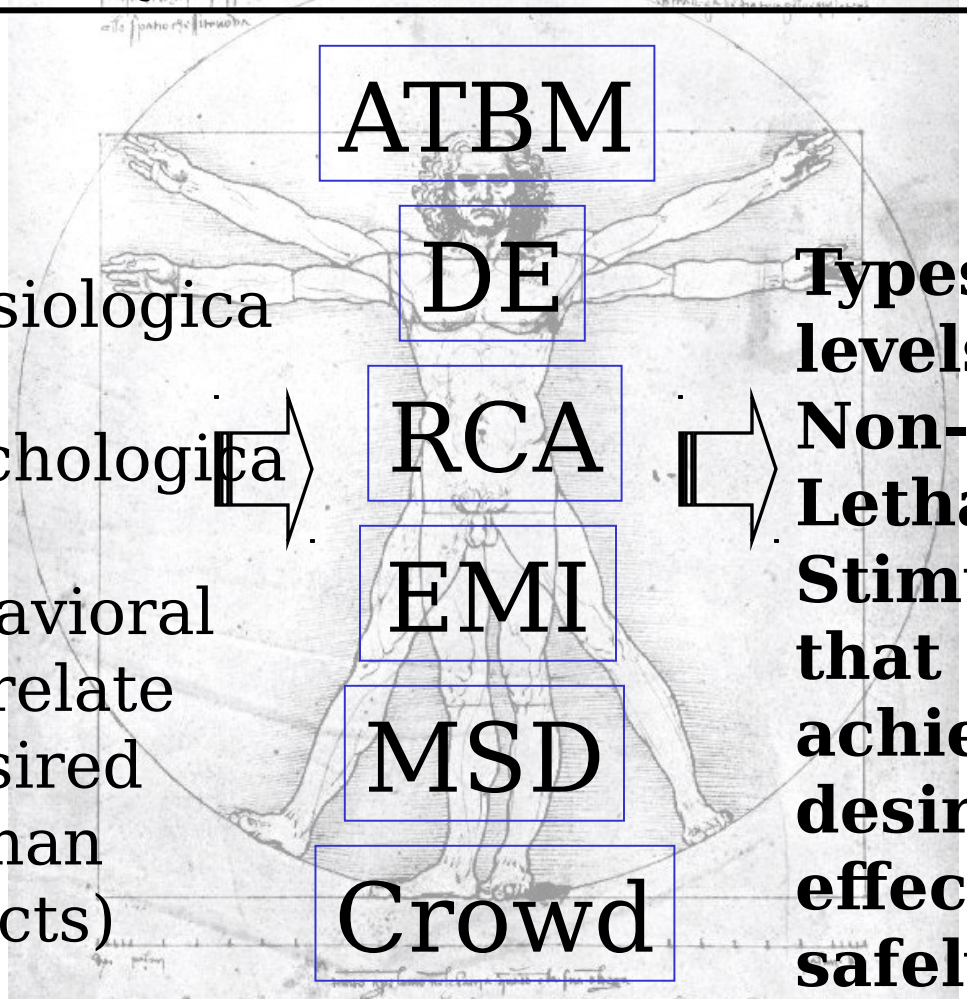
Effects Based NLW Development

Family of NLW Human Effects Models

Operational requirement

- Deter
- Distract
- Dissuade
- Disorient
- Distress
- Render Incapable
- Incapacitate

Physiological, Psychological, Behavioral Correlate (Desired Human Effects)



Types and levels of Non-Lethal Stimuli that achieve desired effects, safely

Biomedical Research Compliance

- Animal Use compliance with/ Title 7 U.S.C Section 21131, Title 9 CFR Parts 1-4, DoD Directive 3216.1, and implementing service regulations
  - American Association for the Accreditation of Laboratory Animal Care
  - Institutional Animal Care and Use Committees
  - NIH Pub 86-23, Guide for Care and Use of Lab Animals
  - Annual reporting requirements to OSD
- Human Research compliance w/ Title 10 U.S.C. Section 980, Title 32 CFR Part 219, DoD Directive 3216.2, and implementing service regulations
  - Stipulates compliance with DHHS Reg “Protection of Human Subjects”, Title 45 CFR Part 46
  - Requirements for Institutional Review Board, Assurance of Compliance
  - Requirement for informed consent
  - Requirement to protect rights and welfare of subjects
  - Occupational standards often used as benchmarks (ANSI, OSHA)

Wrap-up

- Understanding the human effects of Non-Lethal Technologies is fundamental to their development
- Research to characterize effects and effectiveness is challenging and only starting in many areas
- The JNLWP has developed processes to facilitate understanding these effects
- Efforts continue to address policy issues associated with NL standards and training with NLs
- Working to formalize processes in DoD requirements generation and acquisition frameworks